word 'reticulum' was stretched a little to accommodate preferentially oriented dispositions of the system," Palade asserted, "the name 'endoplasmic reticulum' has a number of admitted shortcomings. We retain it because we do not have a better one" (1956b, p. 92).[27]

For Palade and Porter the micrographs of whole cells provided an anchoring point to which they appealed in interpreting thin sections, and Palade noted the problems others had in interpreting thin sections without this reference point:

> The usual thickness of such sections, *i.e.* 20 to 40 mμ, being much smaller than the mesh size of the reticulum, and even smaller than the diameter of the vesicles and tubules that form its trabeculae, it follows that in sections only slices of these trabeculae or "profiles" can be found. Fragments of meshes, or more or less complete meshes are only occasionally encountered and the continuity of the system throughout the cytoplasm is never apparent; it has been lost by microtomy and can be regained only by the difficult and tedious operation of tridimensional reconstruction. In this respect, one may comment that the use of spread cells as initial specimens for the study of the endoplasmic reticulum was a fortunate coincidence. The main feature of the system, *i.e.* its disposition in a continuous reticulum that permeates the entire cytoplasm, would have been extremely difficult if not impossible to grasp from an exclusive study of sections. It is then easy to understand why, at the beginning at least, the shift from spread to sectioned specimens caused so much confusion about the endoplasmic reticulum. In the few years that have elapsed, a number of conflicting descriptions and interpretations have been advanced and a corresponding number of names proposed for the structures belonging to the system under consideration. A vacuum in terminology, be it only apparent, seems effectively to lead many a biologist into philological temptation. (1956b, pp. 86–7)

In some cases, however, Palade and Porter found clues in the thin sections that allowed them to reinterpret micrographs of whole cells:

> The examination of serial sections and of sections of various incidences indicates that the elements in question are relatively large, flattened vesicles of irregular outline, but of shallow and relatively constant depth for which the

[27] The name did survive even though many critics tried to displace it. In particular, French authors such as Françoise Haguenau (1958) sought to maintain Garnier's term *ergastoplasm*. Novikoff (1956b, p. 971) commented, "Agreement on terminology, sometimes made more difficult by considerations of national pride and human personality, appears to be close at hand, as we rapidly learn more about the membrane systems of cells. Porter's work (1955–6) suggests that all cells possess a similar basic component – a vacuolar system of great complexity – and that in different cells this system shows varying degrees of continuity and specialization. Thus, according to this view, 'ergastoplasm' is essentially a specialized type of 'endoplasmic reticulum' characterized by the presence of basophilic granules on its surface."

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